



UNITED STATES DEPARTMENT OF COMMERCE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/824,119	04/02/01	HODGSON	LITTONP.002C

020995 MM91/0904
KNOBBE MARTENS OLSON & BEAR LLP
620 NEWPORT CENTER DRIVE
SIXTEENTH FLOOR
NEWPORT BEACH CA 92660

EXAMINER

CHANG, A

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 09/04/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/824,119

Applicant(s)

HODGSON ET AL.

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3 and 9-12 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for 6 x 16 sensor array, does not reasonably provide enablement for m x n sensor array. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The specification teach the sensor array has 6 x 16 configuration with specific coupling ratios but does not teach the sensor array may have other configurations and does not teach explicitly that the (6 x 16) configuration may be generalized to an (m x n) configuration with m and n assumes any values that may be different from 6 and 16. In particular, the specification fails to teach the coupling ratios for these other configurations (m x n), which makes the other configurations inoperable since the coupling ratios are essential for the sensor array to be operable. Claims 2-3 and 9-12 inherit the rejection from their respective base claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4-8, and 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The phrase "said signal array" recited in claim 4 appears to be vague and indefinite since it lacks proper antecedent basis from earlier part of the claim.

The phrase "said ... coupling ratios *selected in accordance with respective locations* of said input couplers ... and *respective locations* of said output couplers" recited in claim 4, the phrase "coupling ratios ... is *selected in accordance with a respective location* of ... output coupler" recited in claim 9, and the phrase "the coupling ratios ... are *selected in accordance with respective locations* of said input couplers" recited in claim 10 appear to be vague, confusing and indefinite. Since it is not clear if these phrases meant to specify that the coupling ratios have selected values at respective locations of the couplers or meant to specify that the ratios are determined by certain selection rule "in accordance" to respective locations of the couplers. If a selection rule is intended such must be explicitly specified and taught. Clarifications are required.

Claims 5-8 inherit the rejection from their base claim (claim 4).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frederick (PN. 5,696,857) in view of the patent issued to Hodgson et al (PN. 5,866,898).

Frederick teaches a wavelength/frequency division multiplexer (WDM/FDM) fiber optic sensor array system wherein the sensor array system (100) comprises a plurality of *sensor groups* each sensor groups has a plurality of *sensors* (150, 154 and 134, 138, Figure 2) respectively, a plurality of *fiber lines*

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(118 and 126) as the *distribution fiber lines* for providing signals to the sensors via *couplers* (146 and 130) as the *input couplers* and a plurality of *couplers* (164, 160 and 142) each connects to a sensor as the *output couplers* for providing the signals from the sensors to a *return fiber line* (166), (please see Figure 2). Frederick further teaches to include a frequency synthesizer module (102), a plurality of lasers and multiplexing couplers for providing combined signal with mixed wavelengths of certain ratio to be send to the sensors via distribution fiber lines.

This reference has met all the limitations of the claims with the exception that it does not teach explicitly that each of the input couplers is connected to a respective ones of the sensors and is connected to a different distribution fiber line, however Frederick does teach that the signal provided to each of the sensors is of a single wavelength, (please see column 4). This suggests that a single coupler connected to a single distribution fiber line that transmits a signal of single wavelength for each respective ones of the sensors could also be used as shown in Hodgson et al (as in Figure 1) wherein each sensor has a single input coupler for providing signal from a distribution fiber line to the sensor. It would therefore have been an obvious modification to one skilled in the art to replace the input couplers of Frederick such that to provide a single distribution fiber with an input coupler for each sensor respectively as an alternative arrangement to provide respective signals from the light sources to the sensors.

With regard to the features concerning the number of fiber lines, the specific coupling ratios recited for the input and output couplers and the power range for the signals for return fiber lines, the cited references do not teach such features explicitly. However these features are considered to be obvious variations to one skilled in the art since it is obvious that the wavelength division multiplexing arrangements taught by the cited references have an inherent set of values for the WDM to be operable and the specification fails to teach the criticality of having this particular set of values would overcome any problems in the prior art, these values and features are therefore merely considered here as obvious matters of design choices to one skilled in the art for obtaining particular multiplexing results.

With regard to claims 8, the input couplers and the output couplers are 1x2 couplers.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-3, 4, 6, 9-10 and 11-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,249,622. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both are drawn to a sensor array having a number of distribution fiber lines, a number of return fiber line and a number of sensor groups wherein within any one of the sensor groups input couplers connected to respective ones of the sensors are connected to different one of the distribution fiber lines and all of the output couplers connected to respective ones of the sensors are connected to a return fiber line. The numbers of the distribution lines and the return lines whether to be 6, 16 or m, n are considered to be obvious variation to one skilled in the art.

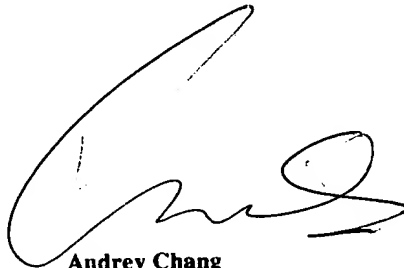
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A. Chang, Ph.D.
August 30, 2001

A handwritten signature in black ink, appearing to read 'Audrey Chang', with a large, sweeping initial 'A'.

Audrey Chang
Primary Examiner
Technology Center 2800